

What is claimed is:

1. A microstrip patch array antenna having a plurality of antenna array elements on two-dimensional planar having A axis and B axis for suppressing side lobes,
5 wherein the antenna array elements are linearly arranged in a direction of the A axis by spacing a first predetermined distance between the antenna array elements, the arranged array elements are arranged in a direction of
10 the B axis by spacing a second predetermined distance between the antenna array elements and a predetermined portion of the microstrip patch array antenna having the arranged array elements are shifted in the direction of the A axis within a predetermined distance.
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2. The microstrip patch array antenna as recited in claim 1, wherein A axis and B axis are perpendicular each other.
- 20 3. The microstrip patch array antenna as recited in claim 1, wherein the antenna array element is a unit radiation element.
- 25 4. The microstrip patch array antenna as recited in claim 1, wherein the antenna array element is a unit sub array element having a plurality of unit radiation elements.

5. The microstrip patch array antenna as recited in claim 1, wherein the array elements have N integer number of antenna array elements in vertical, wherein 1 to $\frac{2}{N}$ antenna array elements are linearly arranged in vertical direction at first and $\frac{N}{2+1}$ to N^{th} antenna array elements are horizontally shifted in a predetermined distance based on the 1 to $(\frac{2}{N})^{\text{th}}$ antenna array elements and then the $\frac{N}{2+1}$ to N^{th} antenna array elements are linearly arranged in vertical direction.

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6. The microstrip patch array antenna as recited in claim 5, wherein the predetermined distance is 1/2 of distance of a space between antenna array elements.

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